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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,843	03/09/2004	Keiji Emoto	1232-5329	5689

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MORGAN & FINNEGAN, L.L.P.
3 WORLD FINANCIAL CENTER
NEW YORK, NY 10281-2101

EXAMINER

GUTIERREZ, KEVIN C

ART UNIT PAPER NUMBER

2851

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 10/797,843	Applicant(s) EMOTO, KEIJI	
	Examiner Kevin Gutierrez	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on March 9, 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9 is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-12 is/are rejected.
- 7) ☒ Claim(s) 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/9/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:

- a. Reference 232 on pg. 19, line 15
- b. Reference 252 on pg. 19, line 21

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. Figure 9 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct

Art Unit: 2851

any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "non-contacts to said chamber" (claim 8) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claim 10 is objected to because of the following:

The limitation "wherein said substrate processing unit point-contacts or non-contacts to said member" is unclear (underline emphasis added by examiner).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 3, 5-7 and 9-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Shiraishi (US 6,700,641).

Regarding claims 1 and 10, Shiraishi discloses "a substrate processing unit (Fig. 3, refs. # 2-9); a chamber (Fig. 3, ref. #1) which accommodates said substrate processing unit (Fig. 3, refs. # 2-9) in a pressure-reduced ambient (Fig. 3, ref. #A1); and a temperature adjusting plate (Fig. 3, ref. # 18) arranged between said substrate processing unit (Fig. 3, refs. # 2-9) and said chamber (Fig. 3, ref. #1). "

Regarding claim 3, Shiraishi discloses "wherein said temperature adjusting plate (Fig. 3, ref.# 18) is arranged between said substrate processing unit (Fig. 3, refs. # 2-9) and at least a portion of an inner wall of said chamber (Fig. 3, ref. #1). "

Regarding claim 5, Shiraishi discloses "wherein said temperature adjusting plate (Fig. 3, ref.# 18) includes a Peltier element (Col. 4, line 3). "

Regarding claim 6, Shiraishi discloses "wherein an emissivity of a surface of said temperature adjusting plate (Fig. 3, ref.# 18) which opposes said substrate processing (Fig. 3, refs. # 2-9) unit is higher than an emissivity of a surface of said chamber (Fig. 3, ref. #1) which opposes temperature adjusting plate (Fig. 3, ref.# 18)." Shiraishi discloses a Peltier element as the temperature adjusting plate (see claim 5), which has the property of having different emissivities on either surfaces (see Klein et al US 2004/0248315, paragraph 66, lines 6-9).

Regarding claim 7, Shiraishi discloses "wherein said temperature adjusting plate (Fig. 3, ref.# 18) has a first surface opposing said substrate processing unit (Fig. 3, refs. # 2-9) and a second surface opposing an inner wall of said chamber (Fig. 3, ref. #1), and an emissivity of the first surface is higher than an emissivity of the second surface." Shiraishi discloses a Peltier element as the temperature adjusting plate (see claim 5), which has the property of having different emissivities on either surfaces (see Klein et al US 2004/0248315, paragraph 66, lines 6-9).

Art Unit: 2851

Regarding claim 11, Shiraishi discloses "wherein an exposure processing unit is performed by utilizing EUV light, X-ray or electron beam (Fig.3, ref. #2; col.7, lines 51-54)."

The method steps of claim 12 are met by the operation of the substrate processing apparatus of claims 10 and 11.

7. Claims 1-3, 8 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamiya (US 2001/0050759).

Regarding claims 1 and 10, Kamiya discloses "a substrate processing unit (Fig. 1, ref. #1-6); a chamber (Fig. 1, ref. #11) which accommodates said substrate processing unit (Fig. 1, ref. #1-6) in a pressure-reduced ambient (paragraph 21, lines 8-13); and a temperature adjusting plate (Fig. 1, ref. #12) arranged between said substrate processing unit (Fig. 1, ref. #1-6) and said chamber (Fig. 1, ref. #11)."

Regarding claim 2, Kamiya discloses "wherein said temperature adjusting plate (Fig. 1, ref. #12) is attached to an inner wall of said chamber (Fig. 1, ref. #11) via a heat-insulating member (Fig. 1, ref. #100d) and spaced apart from said substrate processing unit (Fig. 1, ref. #1-6). "

Regarding claim 3, Kamiya discloses "wherein said temperature adjusting plate (Fig. 1, ref. #12) is arranged between said substrate processing unit (Fig. 1, ref. #1-6) and at least a portion of an inner wall of said chamber (Fig. 1, ref. #11)."

Art Unit: 2851

Regarding claim 8, Kamiya discloses "wherein said substrate processing unit (Fig. 1, ref. #1-6) point-contacts or non-contacts to said chamber (Fig. 1, ref. #11)." As stated above, claim 8 was objected due to potential typographical error. The limitation is being interpreted as the substrate processing (Fig. 1, ref. #1-6) unit is being supported to the said chamber (Fig. 1, ref. #11). In this interpretation, Kamiya discloses the substrate processing unit (Fig. 1, ref. #1-6) being supported by two separate elements located at the bottom of the figure and between the chamber (Fig. 1, ref. #11) and element #10.

Regarding claim 11, Kamiya discloses "wherein an exposure processing unit (Fig. 1, ref. #1-6) is performed by utilizing EUV light, X-ray or electron beam (see Fig. 1, ref #2 and Fig.3, ref. #30)."

The method steps of claim 12 are met by the operation of the substrate processing apparatus of claims 10 and 11.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamiya (US 2001/0050759) in view of Hisai et al (US 2003/0192686).

Kamiya discloses a substrate processing apparatus that utilizes a temperature control system that utilizes a filter inside of a chamber. The filter (Figure 1, ref. # 12) is considered to be the claimed the "temperature adjusting plate (Fig. 1, ref. #12)."

Kamiya does not teach (claim 4) "wherein said temperature adjusting plate (Fig. 1, ref. #12) has a first surface opposing said substrate processing unit (Fig. 1, ref. #1-6) and a second surface opposing an inner wall of said chamber (Fig. 1, ref. #11), and a cooling pipe is provided at the second surface" or (claim 5) "wherein said temperature adjusting (Fig. 1, ref. #12) plate includes a Peltier element."

However, the use of a Peltier element and a cooling pipe adjacent to one side of the Peltier element is routine in the art as is evident to the teaching of Hisai et al (see paragraph 109, lines 1-5). It would have been obvious to one ordinary skilled in the art at the time the invention was made to modify Kamiya by replacing the air-conditioning unit and filter with a Peltier element and a cooling pipe adjacent to one side of the Peltier element. Thus, it would have been obvious to one ordinary skilled in the art at the time the invention was made to include "wherein said temperature adjusting plate (Fig. 1, ref. #12) has a first surface opposing said substrate processing unit (Fig. 1, ref. #1-6) and a second surface opposing an inner wall of said chamber (Fig. 1, ref. #11), and a cooling pipe is provided at the second surface" or "wherein said temperature adjusting plate (Fig. 1, ref. #12) includes a Peltier element."

The ordinary artisan would have been motivated to modify Kamiya in a matter described above for at least the purpose to reduce vibrations associated with the temperature adjusting system.

Regarding claims 6 and 7, the Peltier element of Hisai et al has the property of having different emissivities on either surfaces (see Klein et al US 2004/0248315, paragraph 66, lines 6-9).

Allowable Subject Matter

10. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach or disclose "wherein said chamber has an exhaust port communicating with an exhaust portion, and said temperature adjusting plate has a hole and arranged near the exhaust port such that the hole corresponds to the exhaust port."

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Klein et al (US 2004/0248315) teaches the properties of a Peltier element.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Gutierrez whose telephone number is (571)-272-5922. The examiner can normally be reached on Monday-Friday: 7:30a - 4:00p.

Art Unit: 2851

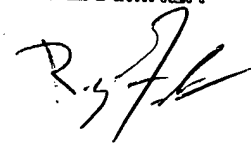
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin Gutierrez
Examiner
Art Unit 2851

April 14, 2005

RODNEY FULLER
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read 'R. Fuller', is written over the printed name and title of the primary examiner.